

**Safer Healthcare Now!
interventions**

- AMI - Acute Myocardial Infarction
- CLI - Central-line associated Bloodstream Infections
- Falls - Falls Collaborative in Long-term care
- MedRec - Medication Reconciliation (Acute care and Long-term care)
- MRSA - Antibiotic-resistant organisms (AROs)/Methicillin-resistant *Staphylococcus aureus*
- RRT - Rapid Response Teams
- SSI - Surgical Site Infections
- VAP - Ventilator-associated Pneumonia
- VTE - Venous thromboembolism

Pilot Projects:

- Medication reconciliation in home care
- Prevent adverse drug events related to high-risk medications in paediatrics

Goal

Prevent deaths in patients who are progressively failing outside the ICU by implementing rapid response teams (RRTs)

**Background**

- The Rapid Response Team (RRT) - also known as the Medical Emergency Team - is a team of clinicians who bring critical care expertise to the patient bedside (or wherever it is needed)
- People die unnecessarily every single day in our hospitals. The goal of the RRT is to respond to a "spark" before it becomes a "forest fire"
- Three main systemic issues contribute to the problem and often lead to a failure to rescue:
 - Failures in planning (including assessments, treatments, and goals)
 - Failure to communicate (patient-to-staff, staff-to-staff, staff-to-physician, etc.)
 - Failure to recognize deteriorating patient condition
- 70% of patients show evidence of respiratory deterioration within eight hours of arrest.¹
- 66% of patients show abnormal signs and symptoms within six hours of arrest; the physician is notified in 25% of cases. One article identified several warning signs present within six hours of arrest: MAP <70, >130 mmHg; heart rate <45, >125 per minute; respiratory rate <10, >30 per minute; chest pain; altered mental status.²
- 50% reduction in non-ICU arrests.³
- Reduced post-operative emergency ICU transfers (58%) and deaths (37%).⁴
- Reduction in arrest prior to ICU transfer (4% versus 30%).⁵

Intervention*Key components to implementing a Rapid Response Team*

- Establish the role of the RRT
- Rapid Response Team considerations prior to implementation
- Engage senior leadership support
- Determine best structure for the team
- Provide education and training
- Establish criteria and mechanism for calling the RRT
- Use a structured documentation tool
- Establish feedback mechanisms
- Measure effectiveness
- Track measures over time

¹ Schein RM, Hazday N, Pena M, et al. Clinical antecedents to in-hospital cardiopulmonary arrest. *Chest*. 1990; 98:1388-1392.

² Franklin C, Mathew J. Developing strategies to prevent in hospital cardiac arrest: analyzing responses of physicians and nurses in the hours before the event. *Crit Care Med*. 1994; 22(2):244-247.

³ Buist MD, Moore GE, Bernard SA, Waxman BP, Anderson JN, Nguyen TV. Effects of a medical emergency team on reduction of incidence of and mortality from unexpected cardiac arrests in hospital: preliminary study. *BMJ*. 2002;324:387-390.

⁴ Bellomo R, Goldsmith D, Uchino S, et al. Prospective controlled trial of effect of medical emergency team on postoperative morbidity and mortality rates. *Crit Care Med*. 2004; 32:916-921.

⁵ Goldhill DR, Worthington L, Mulcahy A, Tarling M, Sumner A. The patient-at-risk team: identifying and managing seriously ill ward patients. *Anesthesia*. 1999; 54(9):853-860.



Intervention Measures

1. Codes per 1000 discharges
Goal: Decrease rate of Codes by 50% in one year

Definition of code should be either: a cardiac arrest (patient required chest compressions +/- defibrillation) OR respiratory arrest (patient required positive pressure ventilation without chest compressions/defibrillation)
2. The percentage of all codes occurring outside ICU
Goal: Decrease the overall incidence of codes occurring outside of ICU
3. The number of calls to the Rapid Response Team
Goal: Increase overall use of the Rapid Response Team over time

Other Resources

The MERRIT study published in *The Lancet* compared 23 hospitals in Australia to determine the effectiveness of Medical Emergency Teams (MET). The study findings disputed the *Safer Healthcare Now!* approach to rapid response teams. See the Institute for Healthcare Improvement response to the MERRIT study included in the link below:

www.ihl.org/IHI/Programs/Campaign/Campaign.htm?TabId=2

Success Stories

- The Rockyview General Hospital of the Calgary Health Region implemented an ICU Outreach Team (MET or RRT) in a six-month pilot project. The results showed a 40% decrease in the number of code blue (cardiac arrest) calls at that site. The project is now being implemented as a regional program.
- The Dartmouth General Hospital in Nova Scotia began planning for a rapid response team in early September 2005. Implementation of pilot testing on one unit, on the day shift only, commenced on November 28, 2005. Borrowing from others, the team has developed roles, protocols, education sessions, documentation tools and an implementation plan. Using the Improvement Model, the team plans to complete implementation by the end of January 2006.
- The Winnipeg Health Region has implemented an RRT strategy as part of the ICU Collaborative. This has resulted in a decline in the number of cardiac arrests outside the ICU, as well as increasing the survival rate from 62% in the first six months of 2004 to 80% in the first six months of 2005.
- The Ottawa Hospital has introduced outreach teams at both General and Civic sites, with the objective of reducing unanticipated cardiac arrests, reducing ICU admissions, shortening the length of ICU stay, and improving the survival of patients admitted to the ICU from the hospital nursing units. The team members are nurses and respiratory therapists with critical care training with intensivist support, and are equipped to provide ICU care to patients anywhere within the hospital. Early results include an approximate 30% reduction in "code blue" calls at both hospital sites, and a trend to improved outcomes for patients admitted to the ICU after team resuscitation.